

ABSTRACT

A semiconductor device facilitates obtaining a higher breakdown voltage in the portion of the semiconductor chip around the drain drift region and improving the avalanche withstand capability thereof. A vertical MOSFET according to the invention includes a drain layer; a drain drift region on drain layer, drain drift region including a first alternating conductivity type layer; a breakdown withstand region (the peripheral region of the semiconductor chip) on drain layer and around drain drift region, breakdown withstand region providing substantially no current path in the ON-state of the MOSFET, breakdown withstand region being depleted in the OFF-state of the MOSFET, breakdown withstand region including a second alternating conductivity type layer, and an under region below a gate pad, and the under region including a third alternating conductivity type layer.